IN THE CLAIMS

Claim 1 (currently amended): A control device for the mixing and temperature control of hot and cold liquids which includes:

a movable distributing member,

a stationary distributing member,

a body supporting the distributing members,

sealing means to seal between parts of the movable and stationary distributing members

characterised in having:

in the stationary distributing member

a hot liquid inlet port

a cold liquid inlet port

a hot liquid outlet port

a first cold liquid outlet port

a second cold liquid outlet port

in the movable distributing member

a hot liquid transfer cavity

a cold liquid transfer cavity

in the body

a convergence space

a hot liquid inlet passage communicating with said hot liquid outlet port and with said convergence space

a first cold liquid inlet passage communicating with said first cold liquid outlet port and with said convergence space

an outlet from said convergence space

flow regulating means within the convergence space capable of regulating the flow of hot and cold liquids entering said convergence space by ~~progressively~~ opening the hot liquid inlet passage while ~~progressively~~ closing the first cold liquid inlet passage and vice versa and capable of effecting complete closure of said hot liquid inlet passage

a temperature sensing device which controls the operation of the flow regulating means

in said outlet, a temperature sensing portion of said temperature sensing device

a second cold liquid inlet passage communicating with said second cold liquid outlet port and with said outlet substantially downstream of said temperature sensing portion

the movable distributing member being movable to each of the following positions:

where the hot liquid inlet port communicates with the hot liquid transfer cavity which communicates with the hot liquid outlet port and at the same time the cold liquid inlet port communicates with the cold liquid transfer cavity which communicates with the first cold liquid outlet port;

or

where the hot liquid inlet port communicates with the hot liquid transfer cavity which communicates with the hot liquid outlet port and at the same time the cold liquid inlet port communicates with the cold liquid transfer cavity which communicates with the first cold liquid outlet port and the cold liquid transfer cavity also communicates with the second cold liquid outlet port;

or

where the hot liquid inlet port and the cold liquid inlet port do not communicate with any outlet port.

Claim 2 (currently amended): ~~A~~ The control device as claimed in claim 1 wherein said movable distributing member is movable in an infinitely variable manner between said positions.

Claim 3 (currently amended): ~~A~~ The control device as claimed in claim 2 wherein said movable distributing member, when moved between said positions where communication exists, may, in use,

maintain the flow rate from said outlet ~~(~~when there are substantially equal supply pressures of hot and cold liquids~~)~~.

Claim 4 (currently amended): ~~A~~ The control device as claimed in claim 3 wherein said movable distributing member, when moved from a position where communication exists towards the position where it does not exist, may, in use, reduce the flow rate from said outlet.

Claim 5 (currently amended): ~~A~~ The control device as claimed in ~~any one of the preceding claims~~ claim 1 wherein said flow regulating means is capable of effecting complete closure of said first cold liquid inlet passage.

Claim 6 (currently amended): ~~A~~ The control device as claimed in ~~any one of the preceding claims~~ claim 1 wherein the convergence space has an axis, a cylindrical wall coaxial with said axis and said flow regulating means includes a movable member capable of moving within the cylindrical chamber defined by said cylindrical wall.

Claim 7 (currently amended): ~~A~~ The control device as claimed in claim 6 wherein said movable member comprises a partition across said cylindrical wall, sealingly slidable to and fro in axial directions, and there is an orifice through said partition which may offer communication between said hot and cold inlet passages.

Claim 8 (currently amended): ~~A~~ The control device as claimed in claim 7 wherein said first cold liquid inlet port passage communicates with said convergence space via said cylindrical ~~wall~~ skirt and said partition includes a cylindrical wall which may be positioned over said cold liquid inlet passage.

Claim 9 (currently amended): ~~A~~ The control device as claimed in claim 8 wherein said skirt may be positioned over said cold liquid inlet passage to a position where said passage is completely closed

so that, in use, no cold liquid can then enter said convergence space.

Claim 10 (currently amended): ~~A~~ The control device as claimed in ~~any one of claims 7, 8 or 9~~ claim 7 wherein said hot liquid inlet passage communicates with said convergence space at or adjacent an end of said cylindrical chamber via a chamber inlet port.

Claim 11 (currently amended): ~~A~~ The control device as claimed in claim 10 wherein the chamber inlet port is circular and is coaxial with said cylindrical wall axis.

Claim 12 (currently amended): ~~A~~ The control device as claimed in claim 11 wherein said first cold liquid inlet passage includes a recess around said cylindrical wall lying substantially between planes which are normal to said cylindrical wall axis.

Claim 13 (currently amended): ~~A~~ The control device as claimed in ~~any one of claims 7 to 12~~ claim 7 wherein said cylindrical wall axis is parallel to an axis about which said movable distributing member may be rotated.

Claim 14 (currently amended): ~~A~~ The control device as claimed in claim 7 ~~or any preceding claim when dependent on claim 7~~ wherein said temperature sensing device is arranged within said body, in use, to expand on sensed liquid temperature increase and contract on sensed liquid temperature decrease, in axial directions.

Claim 15 (currently amended): ~~A~~ The control device as claimed in claim 14 wherein said temperature sensing device includes a housing and a piston capable of being moved axially to and fro with respect to said housing, coaxially with said cylindrical wall axis.

Claim 16 (currently amended): ~~A~~ The control device as claimed in claim 15 wherein said piston can directly contact said partition.

Claim 17 (currently amended): ~~A~~ The control device as claimed in claim 16 wherein there is a resilient bias which biases said partition and said piston to the most contracted position of the temperature sensing device.

Claim 18 (currently amended): ~~A~~ The control device as claimed in claim 17 wherein said resilient bias is a compression spring located between said chamber inlet port and said partition.

Claim 19 (currently amended): ~~A~~ The control device as claimed in claim 18 wherein said partition is cupped and said spring partially surrounds said piston.

Claim 20 (currently amended): ~~A~~ The control device as claimed in ~~any one of claims 14 to 19~~ claim 14 wherein there is protection means for said temperature sensing device which prevents pressure above a pre-determined maximum pressure, being developed within said housing.

Claim 21 (currently amended): ~~A~~ The control device as claimed in claim 20 wherein said housing is movable to and fro in an axial direction coaxial with said cylindrical wall axis, there is a seat in said body and a second resilient bias which biases said housing into the maximum contracted position with respect to the piston, against said seat, but allows movement away from said seat when said pre-determined maximum pressure is developed within said housing.

Claim 22 (currently amended): ~~A~~ The control device as claimed in ~~any one of the preceding claims~~ claim 1 wherein the movable distributing member and stationary distributing member are ceramic discs.

Claim 23 (currently amended): ~~A~~ The control device as claimed in

~~any one of claims 1 to 21~~ claim 1 wherein the movable distributing member has a convex spherical surface and the stationary distributing member has a concave spherical surface.

Claim 24 (currently amended): ~~A~~ The control device as claimed in ~~any one of claims 1 to 21~~ claim 1 wherein the movable distributing member has a convex cylindrical surface and the stationary distributing member has a concave cylindrical surface.

Claim 25 (currently amended): ~~A~~ The control device as claimed in ~~any one of the preceding claims~~ claim 1 wherein the device is in the form a cartridge for a valve.

Claim 26 (currently amended): ~~A~~ The control device as claimed in ~~any one of claims 1 to 24~~ claim 1 wherein the device is a valve and includes a single operating lever.

Claim 27 (cancelled):

Claim 28 (currently amended): A control device for the mixing and temperature control of hot and cold liquids which includes:

a movable distributing member,
a stationary distributing member,
a body supporting the distributing members,
sealing means to seal between parts of the movable and stationary distributing members

characterised in having:

in the stationary distributing member
a hot liquid inlet ~~port~~
a cold liquid inlet ~~port~~
in the movable distributing member
a hot liquid transfer path
a cold liquid transfer path
all wholly or partly contained in the body, or all wholly or

partly contained in the movable distributing member, or all wholly or partly contained in the stationary distributing member:

a convergence space

a hot liquid inlet passage communicating with said hot liquid transfer path and with said convergence space

a first cold liquid inlet passage communicating with said cold liquid transfer path and with said convergence space

an outlet from said convergence space

flow regulating means within the convergence space capable of regulating the flow of hot and cold liquids entering said convergence space by ~~progressively~~ opening the hot liquid inlet passage while ~~progressively~~ closing the first cold liquid inlet passage and vice versa and capable of effecting complete closure of said hot liquid inlet passage

a temperature sensing device which controls the operation of the flow regulating means

in said outlet, a temperature sensing portion of said temperature sensing device

a second cold liquid inlet passage communicating with said cold liquid transfer path and with said outlet substantially downstream of said temperature sensing portion

the movable distributing member being movable to each of the following positions:

where the hot liquid inlet port communicates with the hot liquid transfer path which communicates with the hot liquid inlet passage and at the same time the cold liquid inlet port communicates with the cold liquid transfer path which communicates with the first cold liquid inlet passage;

or

where the hot liquid inlet port communicates with the hot liquid transfer cavity which communicates with the hot

liquid inlet passage and at the same time the cold liquid inlet port communicates with the cold liquid transfer path which communicates with the first cold liquid inlet passage and the cold liquid transfer path also communicates with the second cold liquid inlet passage; or

where the hot liquid inlet port and the cold liquid inlet port do not communicate with each other and block communication from both said hot liquid inlet port and said cold liquid inlet port with any said passage.

Claim 29 (original): A device for mixing and regulating the output temperature of, a hot liquid and a cold liquid, which includes:

a mixing chamber

a hot liquid entry port into said chamber

a cold liquid entry port into said chamber

an outlet from said chamber

an outlet passage from the device which communicates with said chamber outlet

mix proportioning [flow control] means within said chamber able to alter the proportions of hot and cold liquids admitted through said entry ports into said chamber at any rate of combined output flow

a temperature sensing device adapted to sense the temperature of the output of the mixed liquids from the chamber and to control the mix proportioning means so that the output temperature at all output flow rates from the chamber can never exceed, except for a small tolerance for a small time, a selected maximum.

Claim 30 (currently amended): ~~A~~ The device as claimed in claim 29 wherein there is a second entry port for the cold liquid which is into the output passage of the device downstream from where the temperature of the output flow from the chamber is sensed.

Claim 31 (currently amended): ~~A~~ The device as claimed in claim 30 which includes a stationary distributing member and a movable distributing member, the stationary distributing member having ports to the movable distributing member for the supply of hot liquid and cold liquid to the movable distributing member and the movable distributing member regulates the proportions of hot and cold liquid supplied to the hot liquid entry port and to the cold liquid entry ports and the flow rates thereof, and enables complete shut-off of all flows to said ports.

Claim 32 (original): A method of safely mixing convergent flows of a hot liquid and a cold
liquid comprising:
utilising temperature sensing and flow control to regulate a maximum temperature which could emerge from a device for mixing the convergent hot and cold liquids, and then adding a secondary flow of said cold liquid to further drop the temperature of the emergent mixed liquids.

Claim 33 (currently amended): ~~A~~ The method as claimed in claim 32, including the steps of -
controlling the flows of hot and cold liquids to said device between extremes of full on or completely off for either liquid and
controlling said secondary flow of cold liquid from full on to a lesser flow,
all of said control steps being performed through a hand movement of 3
degrees of freedom.